IN THE CLAIMS

Please rewrite the claims as follows:

1.(Currently amended) A sensor apparatus comprising:

a single ~~focusing~~ superachromatic objective lens for ~~receiving~~ focusing on a focal plane radiation in a subspectrum of the visible/NIR/SWIR reflective spectral region and in a subspectrum of the thermal IR 3-15 micron emissive spectral region from a scene;

a beam splitter for receiving radiation from said objective lens and dividing the received radiation into first and second components;

a first focal plane array receiving said first component of said radiation and sensing in a subspectrum of the visible/NIR/SWIR spectral region to produce a corresponding first output signal;

a second focal plane array receiving said second component of said radiation and sensing in a subspectrum of the ~~Thermal~~ thermal IR 3-15 micron spectral region to produce a second output signal; and

a composite signal output ~~related to~~ derived from the signal outputs of said first and second focal plane arrays.

2. (Currently amended) A sensor apparatus as described in claim1 ~~which additionally includes~~ further including an intensifier optically coupled to ~~the~~ said first focal plane array sensing in a subspectrum of the visible/NIR/SWIR spectral regions

3. (Currently amended) A sensor apparatus ~~describe~~ as described in claim 2, ~~where the~~ further including a display device, and wherein ~~the~~ said composite signal output is connected to ~~a~~ said display device. - -

4. (Currently amended) A sensor apparatus as described in claim 3, further including a processor coupled to said first and second focal plane arrays for deriving said composite signal and for connecting said composite signal to said display device, and a control panel ~~by which a user can manipulate~~ connected to said processor for manipulating the processing of signal outputs from the two focal plane arrays to produce a desired displayed visualization.

5. (Currently amended) A sensor apparatus as described in claim 4 which is assembled into a compact hand-held device.

6. (New) A sensor apparatus as described in claim 1, further including a processor coupled to said first and second focal plane arrays for deriving a composite output signal from said first and second output signals.

7. (New) A sensor apparatus as described in claim 6, wherein said processor includes means to perform image fusion to produce said composite output signal.

8. (New) A sensor apparatus as described in claim 7, further including an automated image understanding system for scene recognition.

9. (New) A sensor apparatus as described in claim 8, wherein said image understanding system produces an output signal based on scene recognition.

10. (New) A sensor apparatus as described in claim 1, wherein said first focal plane array is a CCD chip capable of sensing radiation in about the 0.4-1.1 micron spectral range and said second focal plane array is a microbolometer array capable of sensing in about the 7-14 micron spectral range.

11. (New) A sensor apparatus as described in claim 1, wherein said objective lens is a multielemment lens that is superachromatic for radiation in the 0.4 and 14 micron spectral range.

12. (New) A sensor apparatus as described in claim 1, further including a display for receiving said composite signal output.

13. (New) A sensor apparatus as described in claim 1, wherein said beam splitter includes means for maximizing reflection of 0.4 - 0.9 micron radiation while maximizing transmission of 8-14 micron radiation.

14. (New) A sensor apparatus as described in claim 1, wherein said beam splitter includes means for maximizing transmission of 0.4 - 0.9 micron radiation while maximizing reflection of 8-14 micron radiation.

15. (New) A sensor apparatus as described in claim 1, wherein said objective lens is a multielement achromatic lens using the same optical elements to simultaneously focus said subspectrum of visible/NIR/SWIR radiation and said subspectrum of thermal IR on said focal plane, whereby elements of a scene are simultaneously registered on both said first and said second focal arrays, independent of scene depth.

16. (New) A sensor apparatus as described in claim 15, wherein said first and second focal plane arrays convert received radiation to corresponding first and second electronic signals, said sensor further including a processor for fusing said first and second electronic signals to produce a composite output signal, and a controller for regulating said processor to modify said composite signal output; and

means responsive to said composite signal output for producing a display.

17. (New) A sensor apparatus as described in claim 16, wherein said means responsive to said composite signal is a display device for providing an image of said scene.

18. (New) A sensor apparatus as described in claim 16, wherein said means responsive to said composite signal is an automated image understanding system.

19. (New) A sensor apparatus as described in claim 1, further including an automated image understanding system responsive to said composite signal output for, but not limited to, target recognition, biometric recognition and tracking.